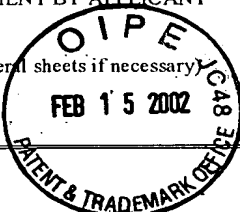


U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE  INFORMATION DISCLOSURE STATEMENT BY APPLICANT  (use several sheets if necessary)  (PTO-1449)	ATTY. DOCKET NO.  176/60981 (6-11402-1001)	SERIAL NO.  10/045,545
	APPLICANT  Mahin D. Maines	
	FILING DATE  January 14, 2002	GROUP ART UNIT  To Be Assigned



## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPRO- PRIATE

## FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRAN- SLATION IF APPRO- PRIATE

## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

JS	1	Panahian et al., "Enhanced Neuronal Expression of the Oxidoreductase - Biliverdin Reductase - After Permanent Focal Cerebral Ischemia," <u>Brain Research</u> 850:1-13 (1999)
JS	2	Maines et al., "Spin Trap (N-t-butyl- $\alpha$ -phenylnitron)-Mediated Suprainduction of Heme Oxygenase-1 in Kidney Ischemia/ Reperfusion Model: Role of the Oxygenase in Protection Against Oxidative Injury," <u>The Journal of Pharmacology and Experimental Therapeutics</u> 291(2):911-919 (1999)
JS	3	Maines et al., "Human Biliverdin IX $\alpha$ Reductase is a Zinc-Metalloprotein: Characterization of Purified and <i>Escherichia coli</i> Expressed Enzymes," <u>Eur. J. Biochem.</u> 235:372-381 (1996)
JS	4	McCoubrey et al., "Site-Directed Mutagenesis of Cysteine Residues in Biliverdin Reductase: Roles in Substrate and Cofactor Binding," <u>Eur. J. Biochem.</u> 22:597-603 (1994)
JS	5	Ewing et al., "Biliverdin Reductase is Heat Resistant and Coexpressed with Constitutive and Heat Shock Forms of Heme Oxygenase in Brain," <u>J. Neurochem.</u> 61:1015-1023 (1993)
JS	6	Maines et al., "Purification and Characterization of Human Biliverdine Reductase," <u>Archives of Biochemistry and Biophysics</u> 300(1):320-326 (1993)
JS	7	Fakhrai et al., "Expression and Characterization of a cDNA for Rat Kidney Biliverdin Reductase," <u>J. Biol. Chem.</u> 267(6):4023-4029 (1992)
JS	8	Huang et al., "Detection of 10 Variants of Biliverdin Reductase in Rat Liver by Two-Dimensional Gel Electrophoresis," <u>J. Biol. Chem.</u> 264(14):7844-7849 (1989)

EXAMINER	DATE CONSIDERED
	10/27/02
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 6 9; Draw line through citation if not in conformance and considered. Include copy of this form with next communication to applicant.	

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE  INFORMATION DISCLOSURE STATEMENT BY APPLICANT  (use several sheets if necessary)  (PTO-1449 )	ATTY. DOCKET NO.  176/60981 (6-11402-1001)	SERIAL NO.  10/045,545
	APPLICANT  Mahin D. Maines	
	FILING DATE  January 14, 2002	GROUP ART UNIT  To Be Assigned

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPRO- PRIATE

## FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRAN- SLATION IF APPRO- PRIATE

## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

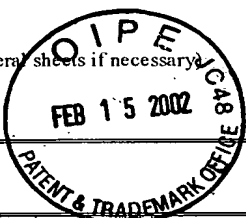
JS	9	Huang et al., "Microheterogeneity of Biliverdin Reductase in Rat Liver and Spleen: Selective Suppression of Enzyme Variants in Liver by Bromobenzene," <u>Archives of Biochemistry and Biophysics</u> 274(2):617-625 (1989)
JS	10	Huang et al., "Multiple Forms of Biliverdin Reductase: Modification of the Pattern of Expression in Rat Liver by Bromobenzene," <u>Archives of Biochemistry and Biophysics</u> 270(2):513-520 (1989)
JS	11	Kutty et al., "Biliverdin Reductase: Characterization in the Rat Kidney and the Inhibition of Activity by Mercuric Chloride," <u>Biochem. Pharmacol.</u> 32(13):2095-2102 (1983)
JS	12	Kutty et al., "Purification and Characterization of Biliverdin Reductase from Rat Liver," <u>J. Biol. Chem.</u> 256(8):3956-3962 (1981)
JS	13	Kutty et al., "Oxidation of Heme c Derivatives by Purified Heme Oxygenase," <u>J. Biol. Chem.</u> 257(17):9944-9952 (1982)
JS	14	Van Bergen, "Hemoglobin and Iron-Evoked Oxidative Stress in the Brain: Protection by Bile Pigments, Manganese and S-Nitrosoglutathione," <u>Free Rad. Res.</u> 31:631-640 (1999)
JS	15	Qato et al., "Prevention of Neonatal Hyperbilirubinaemia in Non-Human Primates by Zn-Protoporphyrin," <u>Biochem. J.</u> 226:51-57 (1985)
JS	16	Magnusson et al., "Heme Oxygenase-1, Heme Oxygenase-2 and Biliverdin Reductase in Peripheral Ganglia from Rat, Expression and Plasticity," <u>Neuroscience</u> 95(3):821-829 (2000)
JS	17	Ewing et al., "Immunohistochemical Localization of Biliverdin Reductase in Rat Brain: Age Related Expression of Protein and Transcript," <u>Brain Research</u> 672:29-41 (1995)

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 6 9; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE  INFORMATION DISCLOSURE STATEMENT BY APPLICANT  (use several sheets if necessary)  (PTO-1449)	ATTY. DOCKET NO.	SERIAL NO.
	176/60981 (6-11402-1001)	10/045,545
	APPLICANT	
	Mahin D. Maines	
	FILING DATE	GROUP ART UNIT
	January 14, 2002	To Be Assigned



## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPRO- PRIATE

## FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRAN- SLATION IF APPRO- PRIATE

## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

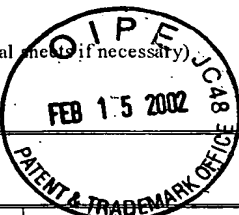
8/5	18	Frydman et al., "Identification of the Amino Acid Residues Essential for the Activity and the Interconversion of the Molecular Forms of Biliverdin Reductase," <u>Biochimica et Biophysica Acta</u> 1040:119-129 (1990)
8/5	19	-McCoubrey et al., "The Structure, Organization and Differential Expression of the Rat Gene Encoding Biliverdin Reductase," <u>Gene</u> 160:235-240 (1995)
8/5	20	Huang et al., "Bromobenzene-Mediated Alteration in Activity and Electrophoretic Pattern of Biliverdin Reductase Variants in Rat Kidney," <u>Mol. Pharmacol.</u> 37:25-29 (1989)
8/5	21	Beri et al., "Biliverdin Reductase Activity in Relation to Bilirubin," <u>Biochemical Society Transactions</u> 20:353S (1992)
8/5	22	Kutty et al., "Rat Liver Cytochrome P-450b, P-420b, and P-420c are Degraded to Biliverdin by Heme Oxygenase," <u>Archives of Biochemistry and Biophysics</u> 260(2):638-644 (1988)
8/5	23	Bell et al., "Kinetic Properties and Regulation of Biliverdin Reductase," <u>Archives of Biochemistry and Biophysics</u> 263(1):1-9 (1988)
8/5	24	Kutty et al., "Hepatic Heme Metabolism: Possible Role of Biliverdin in the Regulation of Heme Oxygenase Activity," <u>Biochemical and Biophysical Research Communications</u> 122(1):40-46 (1984)
8/5	25	Yamaguchi et al., "Biliverdin-IX $\alpha$ Reductase and Biliverdin-IX $\beta$ Reductase from Human Liver," <u>J. Biol. Chem.</u> 269(39):24343-24348 (1994)
8/5	26	Maines, "New Developments in the Regulation of Heme Metabolism and Their Implications," <u>CRC Critical Reviews in Toxicology</u> 12(3):241-314 (1984)

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 6 9; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE  INFORMATION DISCLOSURE STATEMENT BY APPLICANT  (use several sheets if necessary)  (PTO-1449)	ATTY. DOCKET NO.	SERIAL NO.
	176/60981 (6-11402-1001)	10/045,545
	APPLICANT	
	Mahin D. Maines	
	FILING DATE	GROUP ART UNIT
	January 14, 2002	To Be Assigned



## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPRO- PRIATE

## FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRAN- SLATION IF APPRO- PRIATE

## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

27	Terry et al., "Inactivation of Phytochrome- and Phycobiliprotein-Chromophore Precursors by Rat Liver Biliverdin Reductase," <u>J. Biol. Chem.</u> 268(35):26099-26106 (1993)	✓
28	Willis et al., "Heme Oxygenase: A Novel Target for the Modulation of the Inflammatory Response," <u>Nature Medicine</u> 2(1):87-90 (1996)	✓
29	Maines, "Characterization of Heme Oxygenase Activity in Leydig and Sertoli Cells of the Rat Testes," <u>Biochemical Pharmacology</u> 33(9):1493-1502 (1984)	✓
30	Lee et al., "Overexpression of Heme Oxygenase-1 in Human Pulmonary Epithelial Cells Results in Cell Growth Arrest and Increased Resistance to Hyperoxia," <u>Proc. Natl. Acad. Sci. USA</u> 93:10393-10398 (1996)	✓
31	Siow et al., "Heme Oxygenase-Carbon Monoxide Signalling Pathway in Atherosclerosis: Anti-Atherogenic Actions of Bilirubin and Carbon Monoxide?," <u>Cardiovascular Research</u> 41:385-394 (1999)	✓
32	Komuro et al., "Cloning and Characterization of the cDNA Encoding Human Biliverdin-IX $\alpha$ Reductase," <u>Biochimica et Biophysica Acta</u> 1309:89-99 (1996)	✓
33	Cunningham et al., "Cloning, Overexpression and Purification of Biliverdin IX- $\beta$ Reductase," <u>Biochemical Society Transactions</u> 25:S613 (1997)	✓
34	Yamaguchi et al., "Complete Amino Acid Sequence of Biliverdin-IX $\beta$ Reductase from Human Liver," <u>Biochemical and Biophysical Research Communications</u> 197(3):1518-1523 (1993)	✓
35	Ennis et al., "Expression of Rat Biliverdin Reductase as a Glutathione S-transferase Fusion Protein," <u>Biochemical Society Transactions</u> 23:443S (1995)	✓

EXAMINER

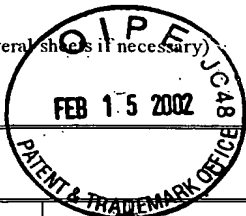
S. W. R. L.

DATE CONSIDERED

10/27/02

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 6 9; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE  INFORMATION DISCLOSURE STATEMENT BY APPLICANT  (use several sheets if necessary)  (PTO-1449)	ATTY. DOCKET NO.	SERIAL NO.
	176/60981 (6-11402-1001)	10/045,545
	APPLICANT	
	Mahin D. Maines	
	FILING DATE	GROUP ART UNIT
	January 14, 2002	To Be Assigned



## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPRO- PRIATE

## FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRAN- SLATION IF APPRO- PRIATE

## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

85		36	Bari et al., "The Interplay Between Basicity, Conformation, and Enzymatic Reduction in Biliverdins," <u>Biochemical and Biophysical Research Communications</u> 188(1):48-56 (1992)	✓
85		37	Maines, "Multiple Forms of Biliverdin Reductase: Age-Related Change in Pattern of Expression in Rat Liver and Brain," <u>Molecular Pharmacology</u> 38:481-485 (1990)	✓
85		38	Mayer et al., "Promotion of <i>trans</i> -Platinum <i>In Vivo</i> Effects on Renal Heme and Hemoprotein Metabolism by D, L-Buthionine-S,R-Sulfoximine," <u>Biochemical Pharmacology</u> 39(10):1565-1571 (1990)	
85		39	Mancuso et al., "Activation of Heme Oxygenase and Consequent Carbon Monoxide Formation Inhibits the Release of Arginine Vasopressin from Rat Hypothalamic Explants. Molecular Linkage Between Heme Catabolism and Neuroendocrine Function," <u>Molecular Brain Research</u> 50:267-276 (1997)	✓
85		40	Guerre et al., "Dose-Related Increase in Liver Heme Catabolism During Rabbit Aflatoxicosis," <u>Toxicology Letters</u> 92:101-108 (1997)	
85		41	Ennis et al., "Cloning and Overexpression of Rat Kidney Biliverdin IX $\alpha$ Reductase as a Fusion Protein with Glutathione S-transferase: Stereochemistry of NADH Oxidation and Evidence that the Presence of the Glutathione S-transferase Domain Does Not Effect BVR-A Activity," <u>Biochem. J.</u> 326:33-36 (1997)	✓
85		42	Lagarias et al., "Regulation of Photomorphogenesis by Expression of Mammalian Biliverdin Reductase in Transgenic Arabidopsis Plants," <u>The Plant Cell</u> 9:675-688 (1997)	

EXAMINER

Slope

DATE CONSIDERED

10/27/02

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 6 9; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

176/60981 (6-11402-1001)

**10/045,545**

### INFORMATION DISCLOSURE STATEMENT BY APPLICANT

APPLICANT

**Mahin D. Maines**

FILING DATE

**January 14, 2002**

GROUP ART UNIT

### To Be Assigned

(use several sheets if necessary)

(PTO-1449)

FEB 15 2002

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPRO- PRIATE

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION IF APPROPRIATE

**OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)**

[illegible]

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 6 9; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.